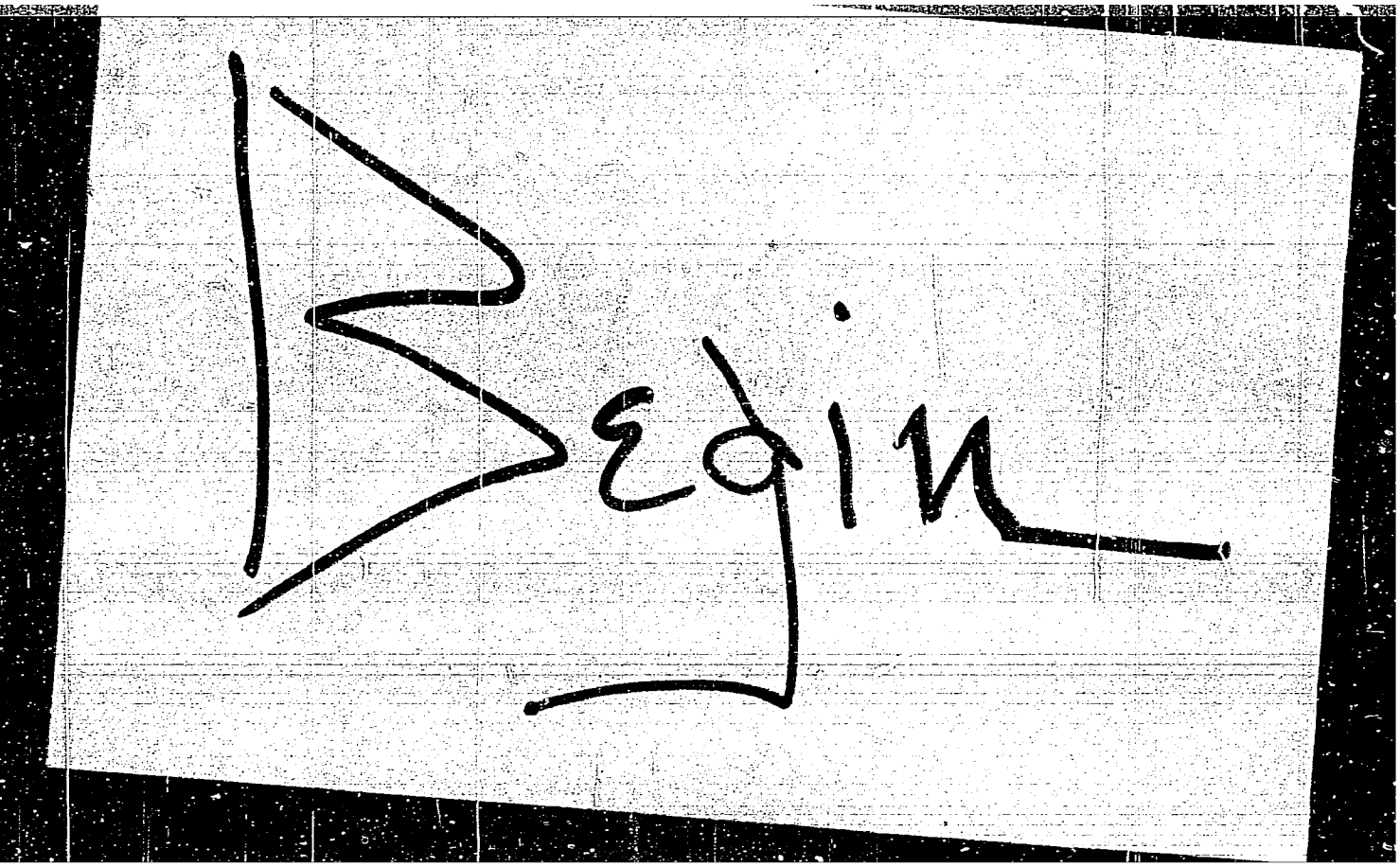

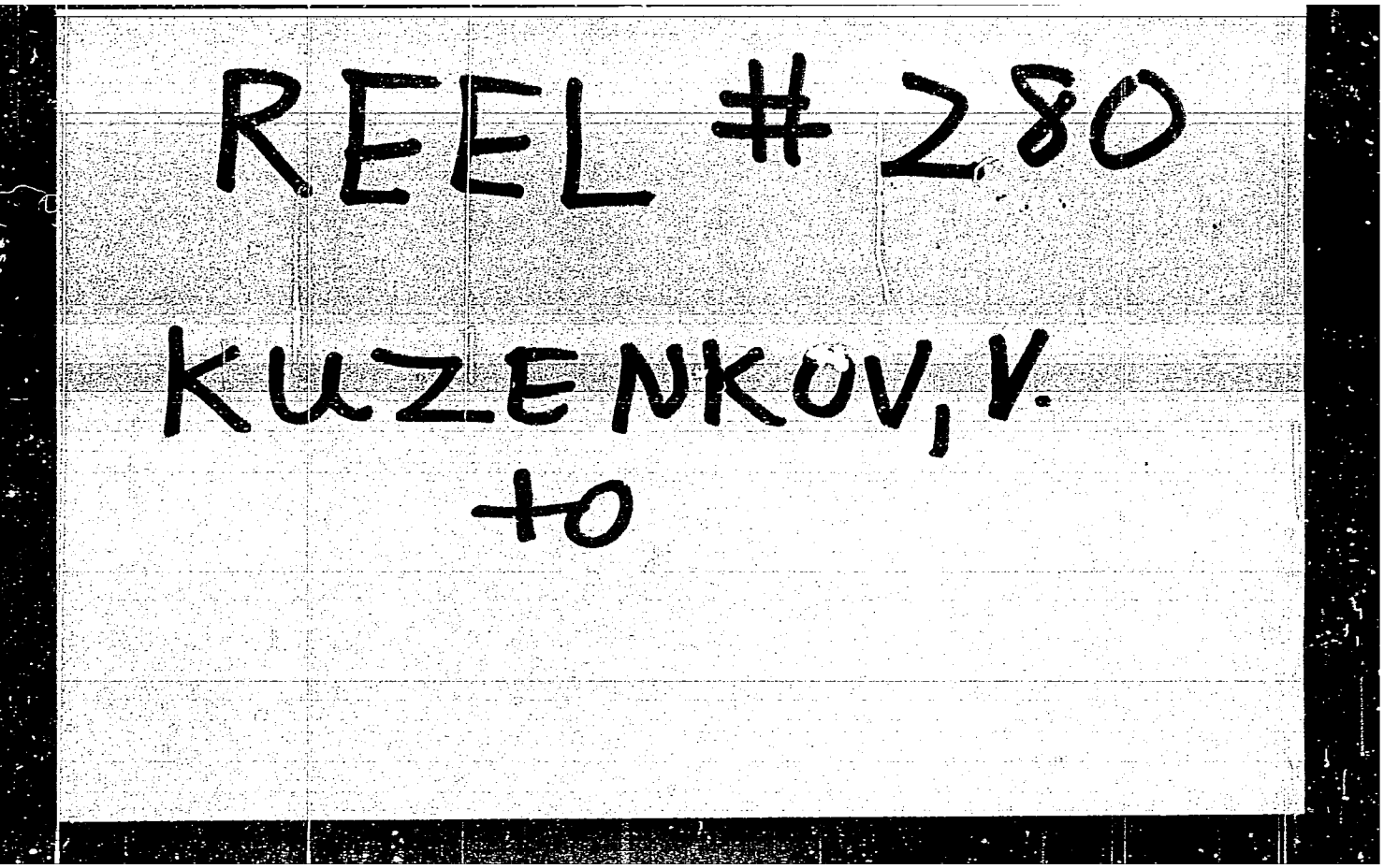

KUZENKOV, V.

Foundry Chemistry

Use of parkerization in the founding industry. Zhil. -kom. khoz., 2 No. 2, 1952.

Monthly List of Russian Accessions, Library of Congress, July 1952. Unclassified

KUZ'MENKOV, V.I.

The 1591-type heavy-duty vertical boring and turning machine. (MIRA 11:4)
Biul. tekh.-ekon. inform. no.1:30-32 '57.
(Machine tools)

S/137/62/000/003/071/191
A006/A101

15.2400

AUTHORS: Radomysel'skiy, I D., Kuzenkova, M.A.

TITLE: Investigation of the properties of structural cermet materials manufactured from iron and cast-iron powder mixtures

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 43, abstract 3G303 ("Poroshk. metallurgiya", 1961, no. 4, 56 - 62, English summary)

TEXT: Structural cermet materials are widely used; therefore it is important to develop sufficiently effective methods of manufacturing these materials. The authors investigated conditions of obtaining compositions from iron and cast-iron powder mixtures. The latter was prepared by grinding cast-iron sheets in a vortex mill. The authors studied the effect of various amounts of cast-iron powders on the pressability and changes in dimensions during sintering. To obtain articles with 7 g/cm^3 specific weight, the pressure of the first pressing should be 4 - 6 t/cm^2; and 8 - 9 t/cm^2 of the second pressing. Optimum temperature of first pressing is 650°C and 1200°C of the second pressing. Mixtures with 20 - 30% cast-iron powder pressed and sintered under the aforementioned conditions, assure the following values: σ_b about 47 kg/mm^2, R_c about 50, and δ 1 -

ACCESSION NR: AT3002[illegible]

48

AUTHOR: Kislyy, P.S.; Kuzenkova, M.A.

TITLE: Gas-impermeable protective thermocouple casings made of zirconium boride

SOURCE: Poroshkovaya metallurgiya, [illegible]

TOPIC TAGS: thermocouple casing, gas impermeable casing, zirconium boride, molybdenum alloy, powdered molybdenum, sintered alloy, powder metallurgy, cermet structure, cast iron, cast iron pouring, temperature regulation

ABSTRACT: Mixutres of zirconium boride and molybdenum powders were sintered to prepare gas-impermeable thermocouple casings. The amount of molybdenum was 5, [illegible]. The sintered materials were investigated by x-ray analysis, [illegible] measurements, photomicrography, etc. It was shown that the high [illegible]

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L 32673-65
ACCESSION NR: AP5004438

can be used for prolonged measurements of the temperature of cast iron discharged from the cupola, and, in the case of cupolas with forehearths, can provide for a continuous measurement and regulation of the temperature prior to pouring. "The casing were tested by the Otdel liteynogo proizvodstva VNIITMash (Casting technology department, VNIITMash) in cooperation with the TsZL of the Volgogradskiy traktornyy zavod (Volgograd

ASSOCIATION: Institut problem materialovedeniya AN UkrSSR(Materials Science Institute, AN UkrSSR)

SUBMITTED: 24Dec63 ENCL: 00 SUB CODE: MM, MT, IE

NO REF SOV: 012 OTHER: 000

L 01803-66 EWP(e)/EWT(m)/EWP(w)/EWP(i)/EPF(n)-2/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)
IJP(c) JD/WW/JG
ACCESSION NR: AP5020769 UR/0226/65/000/008/0045/0049

AUTHOR: Kislyy, P. S.; Kuzenkova, M. A.

TITLE: Immersion method of making thermocouple jackets from zirconium boride

SOURCE: Poroshkovaya metallurgiya, no. 8, 1965, 45-49

TOPIC TAGS: thermocouple, immersion thermocouple, thermocouple jacket, zirconium boride jacket

ABSTRACT: Zirconium-boride jackets for immersion-type thermocouples can be made by dipping a metalic pattern into a mixture of zirconium-boride powder (79.6% Zr, 17.6% B, 0.21% C_{tot}, 0.23% Fe) and paraffin, with oleic acid added as a surface-active diluent. The coefficient of packing $K_p = V_p/V_s$, where V_p is the volume of powder and V_s is the volume of semifinished product, was used as a criterion of the final quality of the semifinished product. The mixture containing 8—10% paraffin with 1% oleic acid was found to be the most suitable and was used for jackets with a wall thickness of 2—2.2 mm. Unsintered jackets had a K_p of 0.6, i.e., close to the theoretical K_p for spherical particles. Mixtures with a higher paraffin content, e.g., containing more than 25, 18, and 19% paraffin in mixtures with pure paraffin and 1 and 2% oleic acid, were structurally unstable. Paraffin was removed

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L 01803-66

ACCESSION NR: AP5020769

before sintering by heating the jackets, which were packed in roasted aluminum-oxide powder. This was followed by sintering. The finished jacket had a porosity of 10—12% and a bending strength of 150 Mn/m^2, which is almost equal to the density and bending strength of extruded and sintered jackets. Orig. art. has: 2 figures. [MS]

ASSOCIATION: Institut problem materialovedeniya AN UkrSSR (Institute of the Problems of the Science of Materials, AN UkrSSR)

SUBMITTED: 22Oct64 ENCL: 00 SUB CODE: IE, TD

NO REF SOV: 015 OTHER: 001 ATD PRESS: 4085

Card 2/2

L 7061-66 EWP(e)/EWT(m)/EPF(c)/EWP(i)/EPF(n)-2/EWP(t)/EWP(k)/EWP(z)/EWP(b)

ACC NR: AP5026275 IJP(c) JD/WW/JG/WB SOURCE CODE: UR/0226/65/000/010/0075/0079

AUTHOR: Kuzenkova, M. A.; Kislyy, P. S.

ORG: Institute of the Problems of the Science of Materials, AN UkrSSR (Institut problem materialovedeniya AN UkrSSR)

TITLE: Investigation of the oxidation resistance of alloys of zirconium boride with molybdenum disilicide

SOURCE: Poroshkovaya metallurgiya, no. 10, 1965, 75-79

TOPIC TAGS: zirconium boride, zirconium boride alloy, molybdenum disilicide containing alloy, alloy oxidation, oxidation resistance

ABSTRACT: Hot-extruded, pure zirconium boride (ZrB_2) with a porosity of 8%, and compacted and sintered ZrB_2 and alloys of zirconium boride with molybdenum disilicide, $(ZrB_{1.9})_{23}\cdot MoSi_{1.1}$, $(Zr_{1.7})_{13}\cdot MoSi_{1.2}$, and $(ZrB_{1.6})_{8}\cdot MoSi_{1.4}$, were oxidized in air at temperatures up to 1000C for up to 10 hr. Sintered ZrB_2 had a porosity of about 15%; the porosity of the alloys was within the limits of 5 to 13%. In the 800—1000C range the oxidation of pure ZrB_2 followed a linear rate. More porous ZrB_2 had an appreciably higher oxidation rate; specimens with a porosity of about 15% completely disintegrated after 8—10 hr exposure. At 1200—1400C the oxidation rate was higher but the specimens did not disintegrate because of the formation of a dense, protective, oxide film which greatly impedes the oxygen diffusion. The film

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L 7061-66
ACC NR: AP5026275

disintegrates at 1450C. The oxidation rate of zirconium boride-molybdenum disilicide alloys at temperatures of about 1000C followed a pattern similar to that for pure ZrB_2. At high temperatures, up to 1500—1550C, dense, oxidation-resistant films are formed at the surface of the base metal. The films are continuous, with a small number of closed pores, adhere strongly to the base metals, and effectively block the access of oxygen to the base material. The films formed at 1600C have interconnected pores which reach the metal surface, and the oxidation rate changes to linear. Thus, the alloys of zirconium boride with molybdenum disilicide have very high oxidation resistance and can be used at temperatures up to 1500—1550C. Orig. art. has: 4 figures and 1 table. [MS]

SUB CODE: MT, IC/ SUBM DATE: 09Jul64/ ORIG REF: 005/ OTH REF: 003/ ATD PRESS: 4144

Card 2/2

L 55954-65 EWT(m)/EWP(e)/EWP(w)/EWP(i)/EWG(m)/EWP(t)/EWA(d)/EPF(n)-2/T/EPR/EWP(b)/
EWA(c) Ps-4/Pu-4 IJP(c) JD/WW/JG

ACCESSION NR: AP5016036 UR/0226/65/000/006/0055/0059

AUTHOR: Kuzenkova, M. A.; Kislyy, P. S.

TITLE: Synthesis and some properties of alloys of zirconium boride with molybdenum disilicide

SOURCE: Poroshkovaya metallurgiya, no. 6, 1965, 55-59

TOPIC TAGS: zirconium boride, zirconium boride alloy, molybdenum disilicide containing alloy, alloy synthesis, alloy structure, alloy physical property

ABSTRACT: The structure and properties of sintered zirconium-boride base alloys containing from 5 to 25% molybdenum disilicide have been investigated. The maximum silicon content, even in alloys with 15, 20, or 25% $MoSi_2$, did not exceed 4.0% probably because of evaporation of silicon at high temperatures. Alloys containing up to 15% $MoSi_2$ had a single-phase structure. Their melting temperature varied from 2545 ± 25°C to 2410 ± 25°C, the microhardness from 2636—2935 to 2435 to 2784 n/mm², and the resistivity from 32 to 27.4 μohm·cm. The resistivity of the alloys increased linearly with increasing temperature (metallic conductivity). Alloys containing 25% $MoSi_2$ are two-phase alloys consisting of a zirconium-boride base solid solution with a hexagonal lattice, and another phase with a micro-

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L 55951-65

ACCESSION NR: AP5016036

hardness of 3957—4232 n/mm^2. Because all the alloys are oxidation resistant up to 1500C, the field of application of zirconium boride can be significantly extended. Orig. art. has: 2 figures and 4 tables. [MS]

ASSOCIATION: Institut problem materialovedeniya AN UkrSSR (Institute of the Problems of the Science of Materials, AN UkrSSR)

SUBMITTED: 09Jul64 ENCL: 00 SUB CODE: MM

NO REF SOV: 016 OTHER: 002 ATD PRESS: 4035

Card 2/2

KUZENKOVA, M.A.; YAKIMENKO, V.O.

High-temperature dilatometer for measuring the shrinkage during sintering. Porosh. met. 5 no.9:76-80 S '65.
(MIRA 18:9)

1. Institut problem materialovedeniya AN UkrSSR.

KU[illegible]ENKOVA, M.A.; KISLYY, P.S.

Investigating the scale resistance of alloys of zirconium boride with molybdenum disilicide. Poroshk. met. 5 no.10: 75-79 O '65. (MIRA 18:11)

1. Institut problem materialovedeniya AN UkrSSR.

KISLYY, P.S.; KUZENKOVA, M.A.

Tips and high-temperature thermocouples with thermoelectrodes made of silicon carbide. Poroshmet. 5 no.11:41-44 N '65.
(MIRA 18:12)

1. Institut problem materialovedeniya AN UkrSSR. Submitted February 23, 1965.

KISLYY, P.S.; KUZENKOVA, M.A.; SHTAYNLYAUF, G.I.; SOLOVYKH, M.A.

Thermocouple tips for continuous temperature control in copper smelting furnaces. Ogneupory 30 no.9:36-39 '65.
(MIRA 18:9)

1. Institut problem materialovedeniya AN UkrSSR (for Kislyy, Kuzenkova). 2. Balkhashskiy gornometallurgicheskiy kombinat (for Shtaynlyauf, Solovykh).

KUZ'ENKOVA, M.A.; KISLYY, P.S.

Preparation of zirconium diboride. Porosh.met. 5 no.12:8-12 D '65. (MIRA 19:1)

1. Institut problem materialovedeniya AN UkrSSR. Submitted March 26, 1965.

L 21301-66 EWP(e)/EWT(m)/EPF(n)-2/EWP(t)/EWP(k) IJP(c) JD/WW/JG

ACC NR: AP6007286 SOURCE CODE: UR/0226/66/000/002/0046/0055

AUTHOR: Kuzenkova, M. A.; Kislyy, P. S.

ORG: Institute of Problems of Metal Science, AN UkrSSR (Institut problem materialovedeniya AN UkrSSR

TITLE: Mechanism of shrinkage of zirconium diboride in the process of sintering

SOURCE: Poroshkovaya metallurgiya, no. 2, 1966, 46-55

TOPIC TAGS: zirconium compound, sintering, isothermal transformation, surface tension

ABSTRACT: A description is given of the regularities of shrinkage of zirconium diboride during the process of sintering. It is established that zirconium diboride, like other brittle materials, has the same shrinkage in the direction of application of the pressing forces and in the radial direction. On the basis of the kinetic dependences of the shrinkage and the changes in porosity, it is shown that with isothermal processing of up to 30 minutes intense shrinkage of zirconium diboride may be described as a process of sliding along grain boundaries under the effect of surface tension forces. With isothermal processing of over 30 minutes shrinkage is due to viscous flow caused by directed diffusion displacement of the atoms under the effect of the gradient of the vacancies on the pore surfaces and the grain boundaries. The presence of dodecaboride in zirconium diboride activates shrinkage in connection

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L 21301-66

ACC NR: AP6007286

with the speeding up of diffusion processes on the grain boundaries. Orig. art. has: 8 figures, 4 formulas and 1 table. [Author's abstract.]

SUB CODE: 11, 13/ SUBM DATE: 05May65/ ORIG REF: 017/ OTH REF: 018/

Card 2/2

L 21144-66 EWT(m)/EPF(n)-2/T/EWP(t) IJP(c) JD/WW/JG
ACC NR: AP6001468 SOURCE CODE: UR/0226/65/000/012/0008/0012

AUTHORS: Kuzenkova, M. A.; Kislyy, P. S. 4/2 B

ORG: Institute of Problems of Metal Science AN UkrSSR (Institut problem meterialovedeniya AN UkrSSR

TITLE: Preparation of zirconium diboride 27 27

SOURCE: Poroshkovaya metallurgiya, nr. 12, 1965, 8-12

TOPIC TAGS: zirconium, diboride, boron, carbide, metallographic analysis, x ray analysis, reduction

ABSTRACT: On the basis of x-ray and metallographic analyses 18 it is shown that zirconium diboride, obtained by the method of boron carbide reduction at temperatures above 1650C, contains about 4.94 ± 0.12% ZrB_{12}. One-phase zirconium boride may be obtained at temperatures below 1650C or at high temperatures with subsequent slow cooling (6--8 degrees/min) within a temperature range of 1650--1400C. The Microhardness of zirconium dodecarboride was determined as 45 ± 1.5 Gn/m^2. Orig. art. has: 2 tables, 3 formulas. (Based on author's abstract.) (AJM)

SUB CODE: 07, 11/ SUBM DATE: 26Mar65/ ORIG REF: 006/ OTH REF: 010/

Card 1/1 ULR

L 31930-66 EWP(e)/EWT(m)/EWP(t)/ETI/EWP(k) IJP(c) JD/WW/JG

ACC NR: AP6015348 . (N) SOURCE CODE: UR/0226/66/000/005/0016/0023

AUTHOR: Kislyy, P. S.; Kuzenkova, M. A.

ORG: Institute for Problems in the Science of Materials AN UkrSSR (Institut problem materialovedeniya AN UkrSSR)

TITLE: Sintering of zirconium diboride with molybdenum alloys

SOURCE: Poroshkovaya metallurgiya, no. 5, 1966. 16-23

TOPIC TAGS: sintering, zirconium alloy, molybdenum alloy, activation energy, shrinkage, zirconium molybdenum alloy

ABSTRACT: The article deals with the shrinkage of samples from mixtures of zirconium diboride with 5-, 10-, and 15-% molybdenum in the process of slow heating to temperatures 1800C or during the initial period of sintering. With rapid heating to 1700-1750C, growth of samples (rather than shrinkage) is observed during the formation of a solid solution of Mo in ZrB_2, due to heterodiffusion. The activation energy of the shrinkage process, based on the computation of the shear viscosity, equals, respectively, 367 ± 48, 352 ± 28, and 379 ± 46 kj/mol for ZrB_2 alloys with the 5-, 10-, and 15% molybdenum, i.e., less than the activation energy in the shrinkage of zirconium diboride (678 ± 55 kJ/mol), which indicates that the presence of molybdenum activates the diffusion processes during sintering. Orig. art. has: 5

Card 1/2

L 31930-66
ACC NR: AP6015348

figures, 2 formulas, and 1 table. [Translation of author's abstract] [AM]

SUB CODE: 11/ SUBM DATE: 14Nov65/ ORIG REF: 008/ OTH REF: 003

Card 2/2

L 32043-66 EWP(e)/EWT(m)/T/EWP(t)/ETI IJP(c) JD/WW/JG

ACC NR: AP6013340 (A) SOURCE CODE: UR/0363/66/002/004/0617/0625

AUTHOR: Kislyy, P.S.; Kuzenkova, M.A.

36
B

ORG: Institute of Materials Science Problems, Academy of Sciences UkrSSR (Institut problem materialovedeniya Akademii nauk UkrSSR)

TITLE: Study of the conversion of zirconium dodecaboride into zirconium diboride

SOURCE: AN SSSR. Izvestiya. Neorganicheskiy materialy, v. 2, no. 4, 1966, 617-625

TOPIC TAGS: zirconium compound, boride

ABSTRACT: The conversion of ZrB_{12} into ZrB_2 was studied by dilatometric, thermographic, and microstructural methods. It was shown that during heating, ZrB_{12} converts into ZrB_2 in the 1530 — 1650C temperature range. The transformation is associated with a decrease in volume, evolution of heat, and increase of general porosity. The kinetics of the transformation are determined by pure diffusion processes. The generation of centers of the new phase is observed in the volume of the matrix at the site of micropores and other defects. The diboride formed accretes coherently around the primary grain of diboride, and thus the latter increases in size. Pores are formed in place of the dodecaboride grains. The coefficient of linear expansion of zirconium

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L 32048-66

ACC NR: AP6013340

O

dodecaboride was found to be 28 x 10^{-6} deg^{-1} in the 1600 — 2200C range. Orig. art. has: 8 figures.

SUB CODE: 11 / SUBM DATE: 30Aug65 / ORIG REF: 004 / OTH REF: 006

Card 2/2 do

L 36311-66 EWP(k)/EWT(m)/EWP(e)/EWP(t)/ETI IJP(c) JD/WW/JW/JG

ACC NR:AP6017097 (A) SOURCE CODE: UR/0226/66/000/001/0012/0016

65
64
6

AUTHOR: Kuzenkova, M. A.; Kislyy, P. S.

ORG: Institute for Problems in Science of Materials, AN UkrSSR (Institut problem materialovedeniya AN

TITLE: Growth of zirconium diboride grains during sintering

SOURCE: Poroshkovaya metallugiya, no.1, 1966, 12-16

TOPIC TAGS: zirconium compound, grain growth, sintering, shrinkage, surface tension, activation energy, boride

ABSTRACT: This paper presents the results of the investigation of growth of zirconium diboride grains during sintering. It is assumed that during the initial period of sintering (about 5 minutes), the grain growth is conditioned by the mechanism of migration of the particles under the effect of surface tension forces causing grains to combine on polygonized borders. At sintering temperatures exceeding 1800C, very intensive shrinkage is observed in the zirconium diboride samples with isothermal holding up to 30 min. Actually, with 1 to 2 min at temperatures from 2100—1700C, the average grain size is found

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Card2/

L 46665-66 EWT(d)/EWP(e)/EWT(m)/EWP(v)/EWP(t)/ETI/EWP(k)/EWP(h)/EWP(l)
ACC NR: AP6009574 (N) SOURCE CODE: UR/0226/65/000/011/0041/0044
IJP(c) JD/WW/JG/WB/AT/WH
AUTHOR: Kislyy, P. S.; Kuzenkova, M. A.

94
92
B

ORG: Institute for the Study of Materials, AN UkrSSR (Institut problem materialovedeniya AN UkrSSR)

TITLE: Silicon carbide-tipped high-temperature thermocouples with silicon carbide thermoelectrodes

SOURCE: Poroshkovaya metallurgiya, no. 11, 1965, 41-44

TOPIC TAGS: silicon carbide, thermocouple, high temperature material, corrosion protection, thermoelectromotive force

ABSTRACT: On the basis of a survey of literature data it is shown that SiC prepared from SiC powder and carbon black is a virtually nonporous material and, when used as the material of thermocouple tips and thermoelectrodes, it is superior to high-temperature ceramics with respect to use in oxidizing and, especially, redox media, since it resists intercrystalline corrosion which causes ceramic thermocouple tips to lose their imperviousness to gas within a little as 10-12 hr of operation at 1700-1800°C. SiC of this kind displays constant physico-

Card 1/2

L 46665-66

ACC NR: AP6009574

2

-technical properties which assure a high reproducibility of electric resistance and thermo-e.m.f., thus making it possible to develop thermocouples with a high sensitivity and stability of thermo-e.m.f. for measuring the temperatures of oxidizing media up to 1800°C. SiC thermoelectrodes display an extremely high electric conductivity; in the region of extrinsic conductivity at 800-1200°C it differs from the mean by only ±4-9%, which indicates a high reproducibility of electrodes with respect to electric resistance. Furthermore, compact nonporous self-binding SiC of this kind displays a high resistance to the effect of molten metals, copper slags, mattes and gaseous redox media, which makes it possible to use SiC thermocouples to organize the continuous measurements of melt temperature in copper-melting furnaces and of the temperatures of gaseous media in the furnaces of ferrous and nonferrous metallurgy. Orig. art. has: 2 figures, 1 table.

SUB CODE: 11, 20, 13/ SUBM DATE: 23Feb65/ ORIG REF: 007/ OTH REF: 010

Card 2/2 egh

L 02371-67 EWP(e)/EWT(m)/T/EWP(t)/ETI/EWP(k) IJP(c) JD/WW/JG/AT/WH
ACC NR. AP6032294 (A) SOURCE CODE: UR/0226/66/000/009/011/0016

AUTHOR: Kuzenkova, M. A.; Kislyy, P. S.

ORG: Institute of Problems in Material Science, AN UkrSSR (Institut problem materialovedeniya AN UkrSSR)

TITLE: Study of sintering zirconium diboride-molybdenum disilicide alloys

SOURCE: Poroshkovaya metallurgiya, no. 9, 1966, 11-16

TOPIC TAGS: zirconium diboride alloy, molybdenum [redacted] containing alloy, alloy sintering, POWDER METAL SINTERING, ZIRCONIUM BASE ALLOY, SILICON CONTAINING ALLOY

ABSTRACT: The process of sintering zirconium diboride alloys with 5, 10 or 15% molybdenum disilicide has been investigated. Specimens 8 mm in diameter and 12 mm high were compacted from zirconium diboride and molybdenum disilicide powders and sintered at 1400—2000C. The sintering is accompanied by formation of zirconium diboride-base solid solution. A liquid phase forms at temperatures above 1800C and brings about an intensive shrinkage. The liquid phase, however, disappears during the sintering process. Silicon evaporation was observed in alloy with 15% molybdenum disilicide. In solid-phase sintering at temperatures up to 1800C, the specimens grow because of heterodiffusion processes with components having different partial diffusion coefficients. Orig. art. has: 7 figures and 1 table. [AZ]

SUB CODE: 11 / SUBM DATE: 30Nov65/ ORIG REF: 004/ OTH REF: 001/
Card 1/1 vmb

ACC NR: AP7002401 SOURCE CODE: UR/0363/66/002/012/2139/2144

AUTHOR: Kislyy, P. S.; Kuzenkova, M. A.

ORG: Institute of the Problems of the Science of Materials, Academy of Sciences UkrSSR (Institut problem materialovedeniya Akademii Nauk UkrSSR)

TITLE: Some properties of zirconium diboride-molybdenum alloys

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 12, 1966, 2139-2144

TOPIC TAGS: sintered alloy, zirconium diboride, molybdenum alloy, alloy composition, ~~alloy~~ oxidation, ~~resistance, alloy~~ thermal shock ~~resistance~~

ABSTRACT:

Zirconium diboride powder, containing 80.0% Zr, 18.90% B, 0.56% Cu and 0.11% Fe, was mixed with 5, 10, or 15% of 99.99%-pure molybdenum powder and compacted into ingots which were sintered in an argon atmosphere at 2000–2100C for 2.5—3 hr, furnace cooled to 1200—1400C, and finally cooled in a stream of argon. X-ray diffraction patterns showed that the sintered alloys consisted of a solid solution of molybdenum in zirconium diboride (Zr, B_2), and (depending on molybdenum content) 6.13, 6.21, or 6.27 mol.% of zirconium boride (ZrB) formed from zirconium dodecaboride present in the zirconium

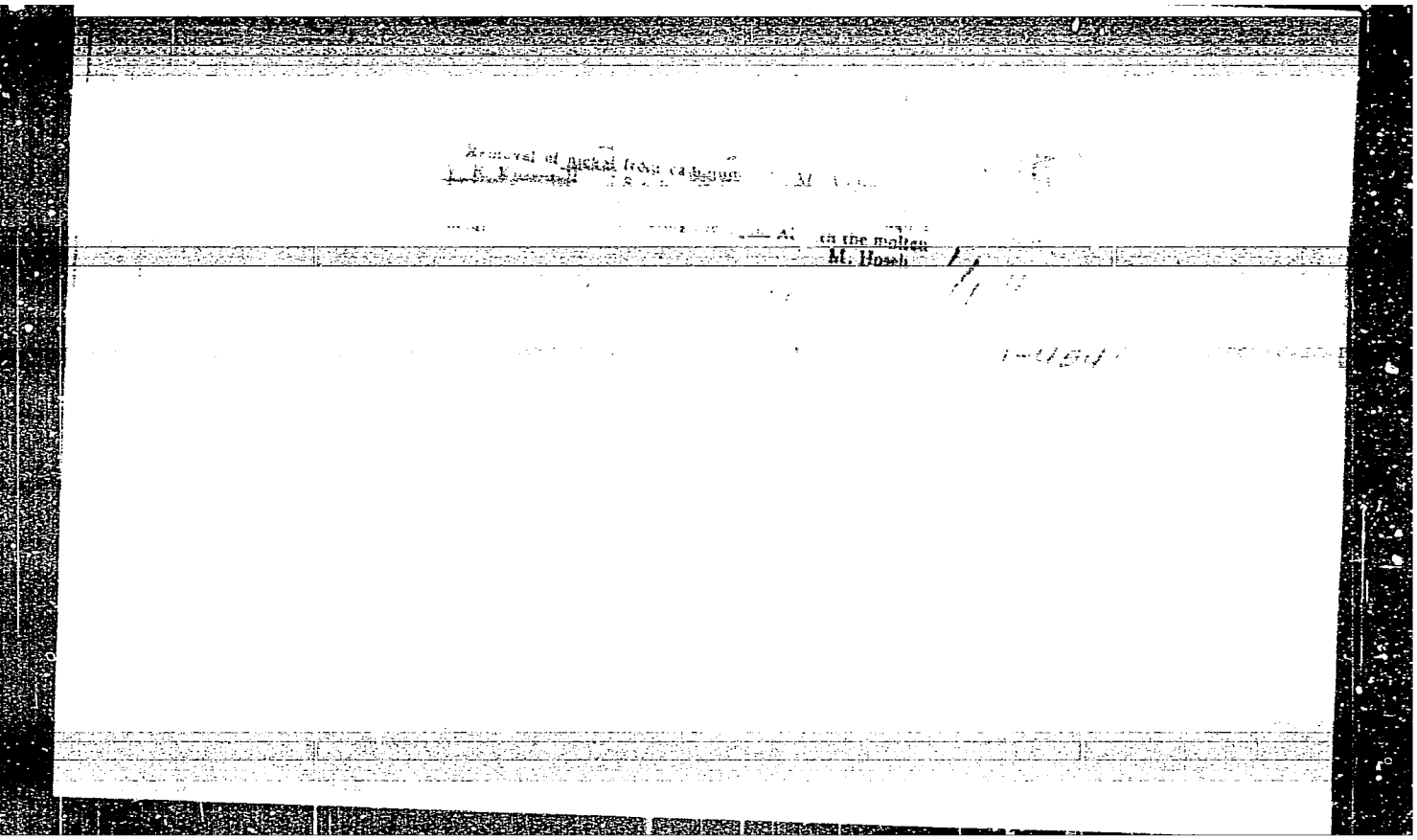
Card 1/2 UDC: 546.3-19-831-77-27

ACC NR: AP7002401

diboride powder. The solid solution of Mo in ZrB_2 in the alloys corresponded to the formulas: $(Zr_{0.952}Mo_{0.048})B_{1.72}$, $(Zr_{0.902}Mo_{0.098})B_{1.47}$ and $(Zr_{0.841}Mo_{0.159})B_{1.35}$. The alloys had a respective microhardness of 2082 ± 120, 1860 ± 140 and 1470 ± 200 dan/mm^2. The microhardness of ZrB_2 and ZrB in all alloys was 2250 ± 100 and 3570 ± 250 dan/mm^2, respectively. Alloys with 5, 10 and 15% Mo extruded and sintered at 2200C had a porosity of 5.5—6.2, 6.8—7.5 and 10.2—13.1%, respectively, and an oxidation rate significantly lower than that of pure ZrB_2. In thermal shock resistance tests (water quenching from 1200C) the alloys with 5, 10 and 15% Mo sustained 8—12, 8—12 and 10—16 cycles, respectively, compared with 2—4 cycles for ZrB_2. Orig. art. has: 1 figure and 4 tables.

SUB CODE: 11/ SUBM DATE: 230ct65/ ORIG REF: 019/ OTH REF: 012/
ATD PRESS: 5112

Card 2/2



Kuzental' V.E.

136-12-7/18

AUTHORS: Khan, O.A., Kabanova, L.M., and Kuzental', V.E.

TITLE: Electrolysis of Cadmium in Cells with Rotating Cathodes (Ob elektrolize kadmiya v vannakh s vrashchayushchimisya katodami)

PERIODICAL: Tsvetnyye Metally, 1957, No.12, pp. 35 - 39 (USSR).

ABSTRACT: The authors describe experiments on the practice, adopted at the Ust'-Kamenogorsk Combine (Ust'-Kamenogorskiy kombinat), for cadmium electrolysis with rotating aluminium disc cathodes in a rubber-insulated cell. Samples of electrolyte were taken every eight hours from commercial cells operating at 100 A/m^2 and analysed for cadmium, sulphuric acid and impurities (Fig.1). The deposit was removed at two-day intervals and analysed for impurities (Table 2). A graph (Fig.2) shows the changes with time of the cadmium content of the electrolyte and the quantity of the metal obtained at successive removals of the deposit. Satisfactory deposits were obtained at 100 A/m^2. Further tests were carried out on a laboratory scale at current densities of 100, 200, 300 and 400 A/m^2. These showed that with impurities in the electrolyte, sound deposits could not be obtained with current densities over 100 A/m^2. The authors discuss this effect and give photomicrographs of deposits obtained. An editorial note suggests that on the available evidence,

Card1/2

KUZENTAL', V.E.

AUTHORS: Andreyev, V.M. and Kuzental', V.E. 136-1-8/20

TITLE: New Method for Refining Cadmium from Nickel (Novyy sposob rafinirovaniya kadmiya ot nikelya)

PERIODICAL: Tsvetnyye Metally, 1958, No.1, pp. 41 - 44 (USSR)

ABSTRACT: Recalling the comparative failure of the selective sulphuric-acid solution method developed and adopted at the Ust'-Kamenogorsk Lead-zinc Combine for removing nickel from cadmium, the authors describe their pyrometallurgical method and the preliminary experiments. In these, M.A. Fishman, B.I. Shevtsov, P.I. Barbin and R.G. Galikeyev participated. The method has been granted Author's Certificate No.107291 and requires a metal whose solubility in cadmium is small, or decreases rapidly on cooling, which forms stable compounds with nickel and from the residues of which cadmium can be removed easily. Aluminium satisfies these conditions and the authors describe laboratory experiments in which molten, nickel-containing cadmium was poured into molten aluminium at 670 - 680 °C, the top nickel-rich layer being poured off; in another series, the cadmium was fused under a protective layer at 660 - 670 °C and aluminium was added with stirring, the dross being fused under alkali to remove cadmium. In later laboratory experiments, the refining temperature was lowered to 500 °C by

Card1/2

using an alloy of 30% Mg and 70% Al, but aluminium was used for full-scale tests. In these 2-ton batches of nickel-contaminated cadmium at 660 - 680 °C were first covered with fused aluminium and then stirred for 30-40 minutes, the heat evolved raising the temperature by 10-50 °C. After cooling to 350-380 °C, the dross is removed and freed from aluminium by sodium hydroxide. The materials balance is given. The method is said to be in use at present at the Combine and gives a thorough purification of cadmium without much reagent consumption or loss of cadmium. There are 3 figures and 1 table.

ASSOCIATION: Ust'-Kamenogorsk Lead-zinc Combine (Ust'-Kamenogorskiy svintsovo-tsinkovoyy kombinat)

AVAILABLE: Library of Congress

KOTEL'NIKOV, V.A., akademik; DUBROVIN, V.M., nauchnyy sotrudnik; KUZENTSOV, B.I.; PETROV, G.M., nauchnyy sotrudnik; RZHIGA, O.N., nauchnyy sotrudnik; SHAKHOVSKOY, A.M., nauchnyy sotrudnik

Successes of planetary radiolocation. Priroda 53 no.9: 2-12 '64. (MIRA 17:10)

SEN'KOV, N.O.; KUZENYATKINA, A.I.

A higher level of organization for rural public health. Zdrav. Kazakh. 22 no.7:3-7 '62. (MIRA 16:1)
(PUBLIC HEALTH, RURAL)

KUZETCHENKO, G.N., inzh.; CHURKIN, V.K., inzh.

Blocking device for sprinkling. Bezop.truda v prom. 7 no.7:33-34 Jl '63. (MIRA 16:9)

(Sprinklers)

KUZETCHENKO, G.N., gornyy inzh.

Outburst on a waste pile at mine No.7 of the "Petrovskugol'" Trust. Ugol' 39 no.1:61 Ja '64. (MIRA 17:3)

1. Kombinat Donetskugol'.

KUZETSOV, V.D.

1965

DECEASED

c 1964

KUZENTSOVA, Z.I.; IVANOVA, V.S.; SHORYGINA, N.N.

Reaction of dialcohol cellulose with nitrogen oxides. Izv. AN SSSR. Ser. khim. no.9:1682-1684 '65. (MIRA 18:9)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.

PENEV, Stan.; KUZEVA, Dim.

Our preliminary experience with antibiotic therapy of favus and trichophytosis. Suvrem med., Sofia no.12:111-117 '60.

1. Iz Okruzhniia kozhno-venerologichen dispancer, Pleven. (Gl.lekar Stan. Penev)
(GRISEOFULVIN ther)
(RINGWORM ther)

KUZEVANOV, N., instruktor

Sharing the experience of the best. Obshchestv. pit. no.10:33-34 O '61. (MIRA 15:1)

1. Troitskiy rayonnyy potrebitel'skiy soyuz Altayskogo kraya.
(Altai Territory--Restaurants, lunchrooms, etc.)

KUZEVANOV, V., inzh.

Unit for cold riveting. Avt.transp. 40 no.9:56 S '62. (MIRA 15:9)

(Rivets and riveting)

KUZEVANOV, V.

Stand for balancing cardan shafts. Avt. transp. 41 no.3:56 Mr '63. (MIRA 16:4)

(Balancing of machinery)

KUZEVIC, J.

Pneumatic jacks. p. 534.
TECHNICKA PRACA, Bratislava, Vol. 6, no. 9, Sept. 1954.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 5, No. 6, June 1956, Uncl.

Kuzevic, J.

Neon program time relay. p. 229. ELEKTROTECHNIK. (Ministerstvo strojirenstvi) Praha. Vol. 11, no. 7, July, 1956.

Source: EEAL LC Vol. 5, No. 10 Oct. 1956

KUZEVIC, J.

The timing of conveyors.

P. 14. (ELEKTROTECHNIK) (Praha, Czechoslovakia) Vol. 13, no. 1, Jan. 1958

SO: Monthly Index of East European Accession (EEAI) LC Vol. 7, No. 5, May 1958

KUZLVIC, J.

Electric control of the speed of direct-current motors. p. 338.

ELEKTROTECHNIK. (Ministerstvo tezkeho strojirenstvi) Praha, Czechslovakia.
Vol. 14, no. 11, Nov. 1959.

Monthly list of East European Accessions (EEAI) LC, vol. 9, no. 1, Jan. 1960.

Uncl.

S/196/62/000/013/018/018
E194/E155

AUTHOR: Kuzevič, Jan.

TITLE: A device for controlling the speed of a two-motor one-sided synchronised drive for conveyors

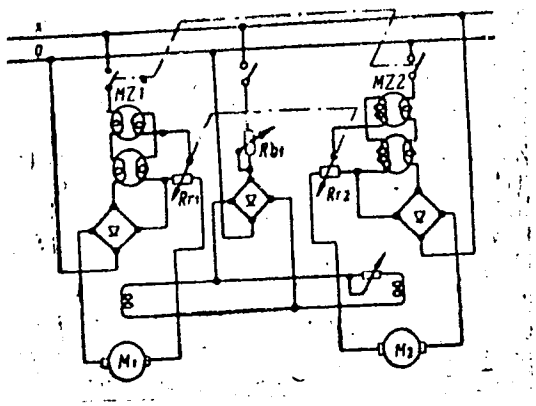
PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.13, 1962, 11, abstract 13 K 54 P. (Czechoslovak Patent class 81 e, 9, no.98563, 15.2.1961)

TEXT: A circuit is proposed to synchronise the speed of a d.c. motor driving a long belt conveyor, consisting of two driving motors, M1 and M2 (see diagram) with independent excitation supplied from magnetic amplifiers MZ1 and MZ2. The current of both magnetic amplifiers can be controlled simultaneously by displacing the negative feedback resistance sliders Rr1 and Rr2, which are connected together. The speed of both motors is controlled simultaneously by means of resistance Rb1. Resistance RB2 serves to synchronise the motors. It alters the speed of only one motor. Its slider is displaced according to the tension in the conveyor belt because it is connected to the tension pulley.
Card 1/2 [Abstractor's note: Complete translation.]

S/196/62/000/013/018/018
E194/E155

A device for controlling the speed...

diagram



Card 2/2

KOZ'MIN, Yu.G., kand.tekhn.nauk; NEVZOROV, I.N., inzh.; KUZEY, G.V., inzh.

Dynamic effect of temporary loading on the metal spans of short-span railroad bridges. Trudy LIIZHT no.178:39-65 '61. (MIRA 15:7)
(Railroad bridges)

SAVEL'YEVA, Ye.; MONASTYRSVA, M.; ORLOVA, G.; KUZ[illegible]EV, A.; FUFLYGINA, T.; LASKINA, V., studenty VI kursa; KOVALEVA, Ye.V., dotsent; DOMBROVSKAYA, Yu.F., professor, chlen-korrespondent Akademii meditsinskikh nauk SSSR, zaveduyushchaya kafedroy.

Effect of external environment factors on the course of rheumatism in children. Pediatriia no.4:40-41 Jl-Ag '53. (MLRA 6:9)

1. Nauchnyy studencheskiy krushok pri kafedre detskikh bolezney I Moskovskogo ordena Lenina meditsinskogo instituta. 2. Akademiya meditsinskikh nauk SSSR (for Dombrovskaya). (Rheumatism)

KUZEYEV, A. I. Cand Med Sci --(diss) "Clinical analysis of the therapeutic effect of euphyllin" Mos, 1957. 15 pp (1st Mos Order of Lenin Med Inst im I. M. Sechenov), 200 copies (KL, 44-57, 101)

KUZEYEV, A.I. (Moskva)

Effect of euphyllin on Cheyne-Stokes respiration in cardiovascular diseases. Klin.med. 35 no.5:42-45 My '57. (MLRA 10:8)

1. Iz pervoy terapevticheskoy kliniki (dir. - chlen-korrespondent AMN SSSR prof. V.Kh.Vasilenko) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M.Sechenova

(RESPIRATION
Cheyne-Stokes resp. in cardiovasc. dis. ther., aminophylline)
(AMINOPHYLLINE, ther. use
Cheyne-Stokes resp. in cardiovasc. dis.)
(CARDIOVASCULAR DISEASES, compl.
Cheyne-Stokes resp., ther., aminophylline)

KUZEYEV, A.I.

KUZEYEV, A.I. (Moskva)

Euphyllin therapy of bronchial asthma. Klin.med. 35 no.7:94-98 Jl '57. (MIRA 10:11)

1. Iz propedevticheskoy terapevticheskoy kliniki (dir. - chlen-korrespondent AMN SSSR prof. V.Kh.Vasilenko) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M.Sechenova.

(AMINOPHYLLINE, therapeutic use, asthma (Rus))
(ASTHMA, therapy, aminophylline (Rus))

KUZNYEV, A.I.

Treating cardiac asthma with euphyllin. Klin.med. 37 no.8: 87-92 Ag '59. (MIRA 12:11)

1. Iz propedevticheskoy terapevticheskoy kliniki (zav. - deystvitel'nyy chlen AMN SSSR prof.V.Kh.Vasilenko) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova.

(AMINOPHYLLINE, therapy)
(DYSPNEA, PAROXYSMAL, therapy)

KARAMYAN, A.S. [deceased]; KUZEYEV, B.I.; KRESS, R.P.; SILIN, Yu.S.; STUKOV, G.M.; SHCHEBOLEV, V.T.; YARITSYNA, I.A.

Use of the method of associated particles in determining the absolute of neutrons emitted by the source. Atom energ. 16 no.3:252-253 Mr '64. (MIRA 17:3)

ACCESSION NR: AP4020334 S/0089/64/016/003/0252/0253

AUTHORS: Karamyan, A.S. (Deceased); Kuzeyev, B.I.; Kress, R.P.; Silin, Yu. S.; Stukov, G.M.; Shchebolev, V.T.; Yaritsy*na, I.A.

TITLE: Absolute determination of a number of neutrons emitted by source, using the associated particle method

SOURCE: Atomnaya energiya, v. 16, no. 3, 1964, 252-253

TOPIC TAGS: absolute determination, absolute neutron determination, associated particle method, alpha particle, emitted neutron, graphite, neutron determination

ABSTRACT: The method of associated particles is based on a comparison of neutron flux from the source being studied with neutron flux from the reaction $T(d\,n)\,He^4$. Since one α-particle corresponds to each outgoing neutron in this reaction, it is possible to determine the number of emitted neutrons by the absolute counting of α-particles. In a medium for which the moderation length is

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ACCESSION NR: AP4020334

less than the diffusion length, it is possible to find such spacing of thermal neutrons from source to detector where the density of thermal neutrons does not depend on the energy of neutrons emitted by the source and is determined only by its intensity. Graphite in the form of a sphere with a 4 m. diameter was used as such a medium. Three curves for 3 different sources are given in the figure in the Enclosure. The point of intersection of curves determines the radius of the efficiency constant for a given device. This distance is 82 cm. To find the number of neutrons being emitted by various sources, it is not necessary to measure the full curves of thermal neutron distribution in the graphite globe. It is sufficient to determine the number of detector readings in the spacing of the efficiency constant. Mean square error of method is about ±1.4%. Orig. art. has: 2 figures.

ASSOCIATION: None

SUBMITTED: 18Apr63	DATE ACQ: 31Mar64	ENCL: 01
SUB CODE: NS, PH	NO REF SOV: 001	OTHER: 002

Card 2/3

ACCESSION NR: AP4020334

ENCLOSURE: 01

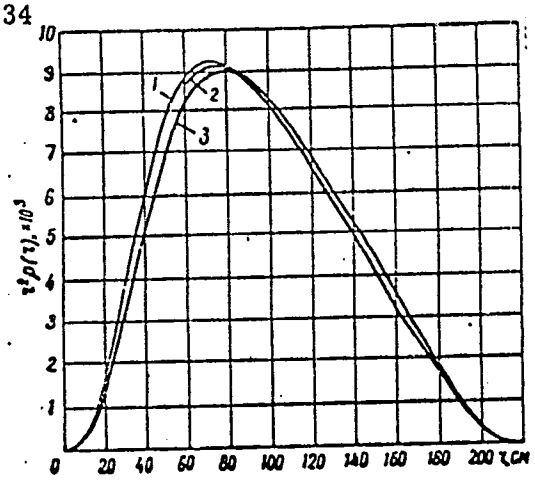

Fig. 1

Space distribution curves for thermal neutrons in graphite sphere:
1--for neutrons of Ra-Be source;
2 - for neutrons of Po-Be source;
3 - for neutrons obtained from $T(d,n)He^4$ reaction

Card 3/3

ROZANOV, I.B., kand. med. nauk; KUZEYEV, Ye.A.

Role of gastroscopy in the diagnosis of diseases of the stomach.
Trudy TSIU 66:179-182 '64. (MIRA 18:5)

KUZEYEV, Ye.A.

Immediate and late results of surgical treatment of nonepithelial tumors of the stomach. Trudy TSIU 66:183-187 '64. (MIRA 18:5)

PLATONOV, G.F.; ABDEYEV, M.A.; BUTENKO, N.S.; SIZOV, Yu.M.; VERSHININA, V.V.; MIKHAYLOV, N.I.; SIDORENKO, T.A.; DYUYSEKIN, Ye.K.; PRIMBETOV, M.D.; KUZHAKHMETOV, E.I.; GANCHENKO, V.M.; SHISHKIN, V.I.; CHIRKOVA, N.P.; IL'INA, I.I.; BERDUS, Yu.M.

Two-stage method of treating slag and sinter cake in electric furnaces. Trudy Alt. GMNII AN Kazakh. SSR 14:4-13 '63. (MIRA 16:9)
(Nonferrous metals—Electrometallurgy)

KUZHAKHMETOV, E.I.; MOTORNAYA, G.A., [illegible] [illegible] [illegible]O, G.I.; PRIMBETOV, M.D.

Chloride sublimation as applied to [illegible] ores from the [illegible]kelayevska ore deposit. Trudy Alt. GMNII AN Kazakh. SSR 14:66-74 '63. (MIRA 16:9)

(Nonferrous metals--Metallurgy)
(Sublimation (Physical sciences))

Country : USSR
Category : Farm Animals. Cattle. Q-2
Abs. Jour : Ref Zhur-Biol., No 16, 1958, 74022
Author : Kuzhakhmetov, M.; Ivanovskiy, V. A.
Institut. : -
Title : The Raising of Calves by the Method of Double Nursing.
Orig Pub. : S. Kh. Povolzh'ya, 1957, No 8, 25-26
Abstract : No abstract.

Card: 1/1

38

DORFMAN, L.I.; KUZHAVSKIY, A.N.

Investigating prechamber injection burners. Gaz.prom. 10 no.5:24-28 '65. (MIRA 18:6)

DORFMAN, L.I.; KUZHAVSKIY, A.N.

Testing the vertical cylindrical VGD-40 boilers equipped with a prechamber medium-pressure injection burner. Gaz. prom. 9 no.5: 23-25 '64. (MIRA 17:6)

KUZHDOVICH, A.

POLAND/Cultivated Plants. Potatoes. Vegetables. Melons M-5

Abs Jour : Ref Zhur - Biol., No 1, 1958, No 1597

Author : A. Kuzhdovich
Inst : Bydgoshui Institute of Plant Selection and Acclimatization
Title : The Effect of Various Conditions of Cultivation of Parental Varieties on the Hybrid Tomatoes

Orig Pub : Acta agrobot., 1956, 4, 157-165

Abstract : At Bydgoshui Plant Selection and Acclimatization Institute two varieties of tomatoes were crossed, the paternal variety of which was reproduced in the hothouse dor 5 years, and the maternal on open ground. The crossing was conducted under field conditions. The various cultivation conditions of the parental forms have not shown any positive effect on the domestic quality of their offspring. Hybrid plants from control crossings, carried out among the same varieties of tomatoes, raised under field conditions, had a higher general yield and higher yield of early fruits.

Card : 1/1

ACC NR: AP7001304 SOURCE CODE: UR/0057/66/036/012/2125/2130

AUTHOR: Kuzhekin, I. P.

ORG: Moscow Power Engineering Institute (Moskovskiy energeticheskiy institut)

TITLE: Investigation of breakdown under square voltage pulses of a liquid in an inhomogeneous field

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 12, 1966, 2125-2130

TOPIC TAGS: dielectric breakdown, water, spark gap, electric field, nonhomogeneous field

ABSTRACT: The author has investigated breakdown of 1 to 30 cm positive and negative point to plane and point to point gaps in water (conductivity, 2.5×10^{-4} mho/cm) by up to 100 kV square (rise time, 0.15 microsec) voltage pulses. The electrode current and gap voltage were observed during the prebreakdown period and the breakdown process was photographed. A sequence of photographs is presented which shows leader development in a point to point gap. The breakdown time (duration of the preleader and leader development stages) depended on electrode polarity and configuration, gap length, and applied potential. The breakdown time T of a positive point to plane gap was given (with considerable scatter) over the full investigated range of gap length L and applied voltage U by the equation $T = KL/(U - U_0)^2$, where K and U_0 are constants. All the observed points lay between the two curves corresponding to the parameter values

Card 1/2

UDC: 537.538

ACC NR: AP 7001304

K = 3900 sec V^2/cm, U_o = 18 kV, and K = 900 sec V^2/cm, U_o = 9 kV. The breakdown potential was found to depend on the electrode configuration as well as on the pulse duration. In a 1 cm gap the breakdown potential of the negative point to plane gap for a 1 millisec pulse was lower than those of the positive point to plane and point to point gaps. For a 100 microsec pulse the breakdown potential of point to plane gaps of both polarities was about half that of the point to point gap. For shorter pulses the breakdown potential of the negative point to plane gap increased rapidly, and the breakdown potentials of the positive point to plane and the point to point gaps were approximately equal for pulses shorter than 1 microsec. Orig. art. has: 1 formula, 3 figures and 1 table.

SUB CODE: 20 SUBM DATE: 18Nov65 ORIG. REF: 007

Card 2/2

L 23493-66 EWT(1)
ACC NR: AP6007084

UR/0057/66/036/002/0338/0341

AUTHOR: Kuzhekin, I.P.

ORG: Moscow Order of Lenin Power Engineering Institute (Moskovskiy ordena Lenina energeticheskiy institut)

36
B

TITLE: Current interruption and repeated breakdown in electric discharges in liquids

SOURCE: Zhurnal tekhnicheskoy fiziki, vo. 36, no. 2, 1966, 338-341

TOPIC TAGS: spark discharge, water, spark gap, electric discharge, electric current

ABSTRACT: The author has investigated the discharge of a 2.2 μF capacitor across a 4.5 cm gap between point electrodes in an 80 x 80 x 80 cm tank of water. The inductance of the circuit was 6.3 μH. When the capacitor was charged to a potential greater than 45 kV the spark discharge was oscillatory and presented no unusual features. When the capacitor was charged to less than 40 kV there was no spark discharge. At intermediate potentials there was frequently observed interruption of the spark discharge current, which was sometimes followed some hundreds of microseconds later by resumption of the current (second or repeated breakdown). When the initial potential on the capacitor was 42 kV current interruption always occurred and a second breakdown was observed in approximately one-third of the discharges. The probability for current interruption decreased with increasing potential. Current interruption was found to occur not

Card 1/2

UDC: 537.528

L 23493-66
ACC NR: AP6007084

only at the moment when the normal discharge current would pass through zero, as observed by G.Weimar (Werkstatt Betrieb, 96, No. 5, 1963), but also at other times, both earlier and later. High speed photographs showed that the diameter of the discharge channel was about 3 mm at the instant of current interruption and had increased to over 30 mm by the time the second breakdown took place. It is tentatively concluded that the current interruption is not due to incursion of water into the discharge channel, as suggested by I.Ye.Balygin (Izv. AN SSSR, Ser. fiz., 22, No. 4, 1958), but to a decrease of the temperature of the channel as a result of its expansion. The second breakdown occurs when the breakdown potential of the channel, which continuously decreases owing to the expansion of the channel and the consequent decrease of pressure, reaches the residual potential on the capacitor. Orig. art. has: 5 figures.

SUB CODE: 20/ SUBM DATE: 03May65/ ORIG REF: 001/ OTH REF: 001

Card 2/2 OLR

M-2

USSR / Cultivated Plants. Grains.

Abs Jour: Ref Zhur-Biol., No 6, 1958, 24957

Author : Girko, P. A., Kaplun, A. L., Kuzhel', A. I.
Inst : Not given
Title : The Effect of Fertilizers on the Yield and Quality of Winter Wheat

Orig Pub: Nauchn. tr. Ukr. s.-kh. akad., 1956, 8, 37-47

Abstract: At the training farm of the Ukrainian Agricultural Academy on dark gray podzolic soil in 8-field grain and potato crop rotations, a comparison was made in 1953-1954 of the yields and quality of winter wheat grain growth on a vetch and oat fallow (VOF) and on a cover of perennial grasses (G) both without and with fertilization. The wheat yield without fertilizer in 1953 totalled on VOF 18.6 and on G-13.9, while in 1954 it was 16.2 and 16.0 centners per

Card 1/2

KUZHEL', A.V.

SUBJECT USSR/MATHEMATICS/Number theory CARD 1/1 PG - 714
AUTHOR KUZEL' A.V.
TITLE An elementary solution of Waring's problem for polynomials according to a method due to Ju.V.Linnik.
PERIODICAL Uspechi mat.Nauk 11, 3, 165-168 (1956)
reviewed 4/1957

In the present paper the author proves elementarily the Waring-Kamke theorem (E.Kamke, Math.Ann. 83, 85-112 (1921)) by use of Linnik's method (Ju.V.Linnik, Mat.Sbornik,n.Ser. 12, 225-230 (1943)). This proof was already published by G.J.Rieger (Math. Z. 60, 213-234 (1954)).

AUTHOR: Kuzhel', A.V.

20-119-5-7/59

TITLE: On the Reduction of Unbounded Non-Selfadjointed Operators to the Triangular Form (O prividenii neogranichennykh nesamosopryazhennykh operatorov k treugol'nomu vidu)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol 119, Nr 5, pp 868-871 (USSR)

ABSTRACT: Let G_A be the set of vectors f belonging to the region of definition D_A of the operator A and for which for an arbitrary $g \in D_A$ there holds: $(Af,g) = (f,Ag)$. Let A_o be an operator being defined only on G_A and there being identical with A. A closed operator A with an everywhere dense D_A is called a K^r-operator if A_o is a Hermitean operator with the defect index (r,r), $r>0$ and if $\dim D_A = r (\mathrm{mod}\ G_A)$. Let the maximal invariant subspace (see [Ref 4]) of A be H_A. The operator A_p which on $(H \ominus H_A) \cap D_A$ is identical with A is called the simple part of A. A is called simple if $A = A_p$.

In further considerations the author restricts himself to the case $r = 1$. Let A be a K^1-operator, let $B = iR_{-i} - iR^*_{-i} - 2R^*_{-i}R_{-i}$, where $R_{-i} = (A+iI)^{-1}$. B can be represented in the form $Bf = \sum (f,g)g$,

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On the Reduction of Unbounded Non-Selfadjointed Operators to the Triangular Form 20-119-5-7/59

$f \in H$, $J = \pm 1$, $g \in \mathfrak{N}_{-i} = H \ominus \Delta_{A_0}(-i)$, $\Delta_{A_0}(-i) = (A_0+iI)G_A$.

The function

$$\omega_A(\lambda) = 1-(1-\lambda i)\left[(A^*-iI)(A^*-\lambda I)^{-1}g,g\right]J$$

is denoted as a characteristic function of A.

Theorem: The simple K^1-operators A_1 and A_2 are unitary equaivalent then and only then if their characteristic functions are equal.

Now the author defines very special operators A_1, A_2 and A_3 in the spaces $H_1 = I_2$, $H_2 = L_2(0,\nu)$, $H_3 = L_2(0,\mu)$; then in $\mathfrak{H} = H_1 \oplus H_2 \oplus H_3$ he considers a manifold D_α of certain vectors f defined also very complicatedly and finally on D_α he defines an operator α which is denoted as the triangular model of the K^1-operator A. It is asserted that α is a K^1-operator too, that the characteristic functions of A and α agree etc.

Theorem: To every K^1-operator A there exists an isotermic operator V which maps $H \ominus H_A$ biuniquely onto $\mathfrak{H} \ominus \mathfrak{H}_A$, where the simple part

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